

**Table of Contents** *(scroll or use links below to navigate document)*[What They Do](#)[Tasks](#)[Skills, Knowledge, and Abilities](#)[Work Environment](#)[California's Job Outlook and Wages](#)[Trends](#)[Training](#)[Where Do I Find the Job?](#)[Where Can the Job Lead?](#)[Other Sources](#)[View Career Video](#)**What They Do**

Have you ever participated in a relay race where you run as fast as you can and then pass the baton to the next runner? Assembly line work is a bit like that except that as you pass off the baton another baton is coming your way. Assemblers work quickly to complete their step in a production line before the product moves to the next step toward completion. Assembly line workers need to be experts in just one step of production rather than being able to make the complete product from start to finish.

Generations of Americans have viewed reruns of the “I Love Lucy” episode where Lucy hopelessly attempts to wrap chocolate candy pieces speeding by her on a runaway conveyor belt. Assembly lines are found in most industries. Automotive assembly lines offer the most well-known example of production lines. From candy to cars, assembly lines offer a more cost-effective way to mass produce goods.

**Tasks**

The title and duties of Assemblers vary from industry to industry and employer to employer. The most common types of Assemblers are listed below:

*Electrical and Electronic Equipment Assemblers* assemble or modify electrical or electronic equipment, such as computers, test equipment, telemetering systems, electric motors, and batteries.

- ▶ Read and interpret schematic drawings, blueprints, and work orders to determine materials requirements and assembly instructions.
- ▶ Drill and tap holes in specified locations to mount control units and to provide openings for elements, wiring, and instruments.
- ▶ Assemble systems and support structures, and install components, units, and printed circuit boards, following specifications, using hand tools and power tools.
- ▶ Position, align, and adjust work pieces and electrical parts to facilitate wiring and assembly.
- ▶ Measure and adjust voltages to specified value to determine operational accuracy of instruments.
- ▶ Inspect units to detect malfunctions, and adjust, repair, or replace component parts to ensure conformance to specifications.
- ▶ Maintain production, time, and component waste records.

## Assemblers

*Coil Winders, Tapers, and Finishers* wind wire coils used in electrical components and electrical equipment and instruments.

- ▶ Review work orders and specifications to determine material needed and type of part to be processed.
- ▶ Attach, alter, and trim materials, such as wire, insulation, and coils, using hand tools.
- ▶ Operate or tend wire-coiling machine.
- ▶ Observe gauges and stop machine to remove completed components, using hand tools.
- ▶ Record productions and operational data on specified forms.

*Electromechanical Equipment Assemblers* assemble or modify electromechanical equipment or devices, such as servomechanisms, gyros, dynamometers, magnetic drums, tape drives, brakes, control linkage, actuators, and appliances.

- ▶ Read blueprints and specifications to determine component parts and assembly sequence of electromechanical unit.
- ▶ Measure parts to determine tolerances, using precision measuring instruments, such as micrometers, calipers, and verniers.
- ▶ Position and align parts, using fixtures, jigs, and templates.
- ▶ Drill, tap, ream, countersink, and spotface bolt holes in parts, using drill press and portable power drill.
- ▶ Assemble parts or unit, and attach unit to assembly, subassembly, or frame, using hand tools and power tools.
- ▶ Inspect, test, and adjust completed unit to ensure that unit meets specifications, tolerances, and customer order requirements.
- ▶ Attach name plates and mark identifying information on parts.

*Engine and Other Machine Assemblers* construct, or rebuild machines, such as engines, turbines, and similar equipment used in such industries as construction, extraction, textiles, and paper manufacturing.

- ▶ Read and interpret assembly blueprints and specifications manuals, and plan assembly or building operations.
- ▶ Rework, repair, and replace damaged parts or assemblies.
- ▶ Verify conformance of parts to stock lists and blueprints, using measuring instruments such as calipers, gauges, and micrometers.
- ▶ Fasten and install piping, fixtures, or wiring and electrical components to form assemblies or subassemblies, using hand tools, rivet guns, and welding equipment.
- ▶ Inspect, operate, and test completed products to verify functioning, machine capabilities, and conformance to customer specifications.

*Team Assemblers* work as part of a team having responsibility for assembling an entire product or component of a product. They may participate in making management decisions affecting the work.

- ▶ Rotate through all the tasks required in a particular production process.
- ▶ Determine work assignments and procedures.
- ▶ Operate heavy equipment such as fork lifts.

- ▶ Provide assistance in the production of wiring assemblies.
- ▶ Shovel and sweep work areas.

Detailed descriptions of these occupations may be found in the Occupational Information Network (O\*NET) at [online.onetcenter.org](http://online.onetcenter.org).

### Important Skills, Knowledge, and Abilities

- ▶ Mechanical — Knowledge of machines and tools, including their designs, uses, repair, and maintenance.
- ▶ Operation Monitoring — Watching gauges, dials, or other indicators to make sure a machine is working properly.
- ▶ Manual Dexterity — The ability to quickly move your hand, your hand together with your arm, or your two hands to grasp, manipulate, or assemble objects.
- ▶ Quality Control Analysis — Conducting tests and inspections of products, services, or processes to evaluate quality or performance.
- ▶ Equipment Selection — Determining the kind of tools and equipment needed to do a job.
- ▶ Finger Dexterity — The ability to make precisely coordinated movements of the fingers of one or both hands to grasp, manipulate, or assemble very small objects.

Good eyesight is required for positions working with small parts. Electrical/Electronic Assemblers must be able to correctly identify colors to match colored wires and parts.

### Work Environment

Most Assemblers work in air conditioned buildings. Other working conditions for Assemblers will differ by industry, employer, and product. Some products must be assembled in spotless, dust-free conditions provided by a cleanroom. Other products are assembled where loud noise, fumes, vibrations, and dust abound. Some Assemblers stand most of the time while other Assemblers work seated at benches. Kneeling, crouching, stooping, and crawling may be necessary in some Assembler jobs. Protective or safety equipment such as safety shoes, glasses, gloves, hearing protection, or hard hats may be required on the job. Many Assemblers work with automated equipment which determines the pace of the work.

Some manufacturing plants operate around the clock, and Assemblers may be required to work evenings, nights, or weekends as well as overtime when needed. As workers obtain seniority, they have more choice about shift assignments. Union membership may be available in some industries.

## Assemblers

### California's Job Outlook and Wages

The California Outlook and Wage table below represents the occupations across all industries.

Standard Occupational Classification	Estimated Number of Workers 2004	Estimated Number of Workers 2014	Average Annual Openings	2006 Wage Range (per hour)
<b>Electrical and Electronic Equipment Assemblers</b>				
51-2022	29,100	30,800	860	\$9.85 to \$16.39
<b>Coil Winders, Tapers, and Finishers</b>				
51-2021	1,400	1,200	30	\$9.54 to \$13.23
<b>Electromechanical Equipment Assemblers</b>				
51-2023	9,800	8,900	230	\$9.98 to \$16.83
<b>Engine and Other Machine Assemblers</b>				
51-2031	1,900	1,900	50	\$11.92 to \$23.54
<b>Team Assemblers</b>				
51-2092	97,100	109,100	3,710	\$8.61 to \$13.43

*Wages do not include self-employment.*

*Average annual openings include new jobs plus net replacements.*

*Source: [www.labormarketinfo.edd.ca.gov](http://www.labormarketinfo.edd.ca.gov), Employment Projections by Occupation and OES Employment & Wages by Occupation, Labor Market Information Division, Employment Development Department.*

### Trends

The number of Assembler jobs are declining for Coil Winders, Tapers, and Finishers and Electromechanical Equipment Assemblers. Jobs for Electrical and Electronic Equipment and Team Assemblers will grow slower than average compared with all occupations in the 2004 through 2014 projections period. Jobs for Assemblers will come from replacing workers who permanently leave the field rather than job growth. Many Assembler jobs were moved overseas by employers for lower labor costs. Companies often contract with temporary help firms for Assemblers rather than hire directly. Automation of assembly processes has further reduced the need for Assemblers. A new type of automation, cobots, will be operated by Assemblers. A cobot is a robot-like device that collaborates with a human operator to move and position parts.

### Training/Requirements/Apprenticeships

Many Assembler jobs are entry-level positions that require only a high school diploma. Other Assembler jobs call for training programs offered by regional occupational programs (ROP), community colleges, and vocational schools.

**Recommended High School Course Work**

Helpful high school courses for students interested in this kind of work include mathematics, electronics, drafting, computers, and metal shop.

**Where Do I Find the Job?**

Direct application to employers remains one of the most effective job search methods.

Use the *Search for Employers by Industry* feature on the *Career Center* page at [www.labormarketinfo.edd.ca.gov](http://www.labormarketinfo.edd.ca.gov) to locate employers in your area. Search under the following industry names to get a list of private firms and their addresses:

- ▶ Bare Printed Circuit Board
- ▶ Dental Laboratories
- ▶ Electricity & Signal Testing Instruments
- ▶ Industrial Process Variable Instruments
- ▶ Other Electronic Component
- ▶ Other Engine Equipment
- ▶ Search, Detection, and Navigation Instruments
- ▶ Semiconductor and Related Devices
- ▶ Speed Changer, Drive, and Gear
- ▶ Surgical and Medical Instruments
- ▶ Surgical Appliance and Supplies
- ▶ Turbine Generator and Generator Set Units

Search **yellow page** headings for employment services or temporary help agencies since many manufacturers use Assemblers who are actually employees of the employment service agency.

**Where Can the Job Lead?**

Experienced Assemblers can advance to quality control, repair, and supervisory positions as they become more skilled. In a research and development section, they may assist with building prototypes. Assemblers who develop their math and computer skills will be prepared for automated production line equipment advances. Apprenticeship opportunities for skilled trades, such as tool and die maker, may be available in some companies.

**Other Sources of Information**

International Association of Machinists and Aerospace Workers  
[www.iamaw.org](http://www.iamaw.org)

International Union, United Automobile, Aerospace  
and Agricultural Implement Workers of America (UAW)  
[www.uaw.org](http://www.uaw.org)

Get Tech  
[www.gettech.org](http://www.gettech.org)

